

LISTING OF THE CLAIMS

Claims 1-30 (Canceled)

Claim 31 (Original): A method of manufacturing a power MOSFET, comprising:
epitaxially growing a drift layer of a first conductivity type on a first conductivity
type semiconductor substrate used as a drain layer, said drift layer being doped with
impurities having a concentration distribution increasing up to said semiconductor substrate;

epitaxially growing a base layer of a second conductivity type on said drift layer;
forming a source region of the first conductivity type on said base layer;
forming a trench penetrating said source region and said base layer to reach at said
drift layer; and

forming a trenched gate structure including a gate insulating film and a gate
electrode, said gate insulating film having a thin portion facing said base layer and a thick
portion facing said drift layer.

Claim 32 (Currently Amended): The method of manufacturing a power MOSFET
according to Claim 31, wherein said forming the drift layer comprises:

forming a first epitaxial layer of the first conductivity type on said semiconductor
substrate with a first impurity concentration;

forming a second epitaxial layer of the first conductivity type ~~of~~ on said first epitaxial
layer with a second impurity concentration lower than ~~that~~ the first impurity concentration of
said first epitaxial layer; and

heat treating said first and second epitaxial layers for smoothing the first and second
impurity concentrations.

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Claim 33 (Original): The method of manufacturing a power MOSFET according to

Claim 32, which further comprises:

implanting impurities from a surface of said second epitaxial layer up to a predetermined depth thereof; and
diffusing the implanted impurities into said second epitaxial layer to form a peak of the impurity concentration in said second epitaxial layer.